0059525

SAF-B00-054
100-NR-1 TSD Sites
R. A. Sampling – Soil
FINAL DATA PACKAGE

E:MAIL RESULTS TO:

Rick Kerkow 372-8655 N/A
INITIAL/DATE

COMPLETE COPY OF DATA PACKAGE TO:

Rick Kerkow X5-60 BL 4/15/03
INITIAL/DATE

Jeanette Duncan BL 4/15/03
INITIAL/DATE

COMMENTS: (PLEASE INCLUDE THE FOLLOWING ON THE FAX COVER SHEET)

SDG (H2105) SAF-B00-054

Rad only Chem only X Rad & Chem

X Complete Partial

Waste Site: 116-N-1 Trench Plume 8-B

LIONVILLE LABORATORY INC.

3 April 2003

Joan Kessner
Bechtel-Hanford, Inc.
3190 Washington Way
MSIN H9-03
Richland, WA 99352

Subject: Contract No. 630
Analytical Data Package

Dear Ms. Kessner:

Enclosed are the hard copy analytical reports for the batch number/fraction indicated (marked X) in the following table:

LvLI Batch #	0303L985
SDG #	H2105
SAF #	B00-054
Date Received	3-20-03
# Samples	1
Matrix	Soil
Volatiles	X
Semivolatiles	X
Pest/PCB	
DRO/KRO/GRO	
GC Alcohols	X
Metals	X
Inorganics	X

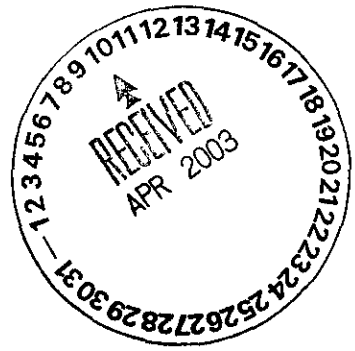
The electronic data deliverable (EDD) will be emailed shortly. If you have any questions, please don't hesitate to contact me at (610) 280-3012.

Sincerely,
Lionville Laboratory Incorporated

Oriette S. Johnson
Project Manager

r:\group\pm\oriette\tnu-hanford\data\lb_ltrs.doc

208 Welsh Pool Road • Lionville, PA 19341-1333 • (610) 280-3000 • Fax (610) 280-3041



Lionville Laboratory, Inc.
VOA ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B00-054, H2105

DATE RECEIVED: 03/20/03 LVL LOT # :0303L985

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00JD1	001	S	03LVG065	03/18/03	N/A	03/21/03
J00JD1	001 MS	S	03LVG065	03/18/03	N/A	03/21/03
J00JD1	001 MSD	S	03LVG065	03/18/03	N/A	03/21/03
LAB QC:						
VBLKMT	MB1	S	03LVG065	N/A	N/A	03/21/03
VBLKMT	MB1 BS	S	03LVG065	N/A	N/A	03/21/03

LIONVILLE LABORATORY INC.

Client: TNU-HANFORD B00-054
LVL #: 0303L985
SDG/SAF # H2105/B00-054

W.O. #: 11343-606-001-9999-00
Date Received: 03-20-2003

GC/MS VOLATILE

One (1) soil sample was collected on 03-18-2003.

The sample and its associated QC samples were analyzed according to criteria set forth in Lionville Laboratory OPs based on SW 846 Method 8260B for TCL volatile target compounds on 03-21-2003.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from a sample that met LvLI's sample acceptance policy with the exception of a discrepancy, which has been recorded on the Sample Receipt Checklist (p-10).

2. The sample was analyzed within holding time.

3. Non-target compounds were not detected in the sample.

4. All surrogate recoveries were within EPA QC limits.

5. All matrix spike recoveries were within EPA QC limits.

6. All blank spike recoveries were within EPA QC limits.

7. Internal standard area criteria were not met for sample J00JD1. The analysis of associated matrix spike sample fulfills the reanalysis requirement.

8. "I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

by _____ 05-25-03

J. Michael Taylor
President
Lionville Laboratory Incorporated

Date

som\group\data\voa\tnu-hanford\0303-985.doc

208 Welsh Pool Road • Lionville, PA 19341-1333 • (610) 280-3000 • Fax (610) 280-3041

GLOSSARY

DATA QUALIFIERS

U	=	Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.
J	=	Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
B	=	This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
E	=	Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
D	=	Identifies all compounds identified in an analysis at a secondary dilution factor.
I	=	Interference.
NQ	=	Result qualitatively confirmed but not able to quantify.
A	=	Indicates that a TIC is a suspected aldol-condensation product.
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X	=	This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).
Y	=	Additional qualifiers used as required are explained in the case narrative.

GLOSSARY

ABBREVIATIONS

BS	=	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.
BSD	=	Indicates blank spike duplicate.
MS	=	Indicates matrix spike.
MSD	=	Indicates matrix spike duplicate.
DL	=	Suffix added to sample number to indicate that results are from a diluted analysis.
NA	=	Not Applicable.
DF	=	Dilution Factor.
NR	=	Not Required.
SP, Z	=	Indicates Spiked Compound.

TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual quan modifications or integrations are performed routinely to improve the data quality for a variety of technical reasons. Documentation of these modifications should be clear and concise. The following "flags" are used to indicate the technical reasons for quan modifications:

MP - Missed Peak: manually added peak not found by automatic quan program.

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SP - Split Peak: the automatic integration improperly split the peak; a manual integration was performed to get the correct area.

CB - Coelution/Background: peak was manually integrated to eliminate contribution from coeluting compounds, background signal, or other interference.

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Lionville Laboratory, Inc.

Volatiles by GC/MS, HSL List — Report Date: 03/23/03 09:24

RFW Batch Number: 0303L985 — Client: TNU-HANFORD B00-054, H2105 — Work Order: 11343606001 — Page: 1a

	Cust ID:	J00JD1	J00JD1	J00JD1	VBLKMT	VBLKMT BS
Sample Information	RFW#:	001	001 MS	001 MSD	03LVG065-MB1	03LVG065-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	0.943	1.02	0.962	1.00	1.00
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate Recovery	Toluene-d8	95 %	93 %	95 %	98 %	96 %
	Bromofluorobenzene	84 %	85 %	84 %	89 %	90 %
	1,2-Dichloroethane-d4	93 %	97 %	101 %	95 %	100 %
Chloromethane		10 U	11 U	11 U	10 U	10 U
Bromomethane		10 U	11 U	11 U	10 U	10 U
Vinyl Chloride		10 U	11 U	11 U	10 U	10 U
Chloroethane		10 U	11 U	11 U	10 U	10 U
Methylene Chloride		17	21	17	5 U	5 U
Acetone		2 J	3 J	3 J	10 U	1 J
Carbon Disulfide		5 U	6 U	6 U	5 U	5 U
1,1-Dichloroethene		5 U	85 %	81 %	5 U	98 %
1,1-Dichloroethane		5 U	6 U	6 U	5 U	5 U
1,2-Dichloroethene (total)		5 U	6 U	6 U	5 U	5 U
Chloroform		5 U	6 U	6 U	5 U	5 U
1,2-Dichloroethane		5 U	6 U	6 U	5 U	5 U
2-Butanone		10 U	11 U	11 U	10 U	10 U
1,1,1-Trichloroethane		5 U	6 U	6 U	5 U	5 U
Carbon Tetrachloride		5 U	6 U	6 U	5 U	5 U
Bromodichloromethane		5 U	6 U	6 U	5 U	5 U
1,2-Dichloropropane		5 U	6 U	6 U	5 U	5 U
cis-1,3-Dichloropropene		5 U	6 U	6 U	5 U	5 U
Trichloroethene		5 U	99 %	101 %	5 U	100 %
Dibromochloromethane		5 U	6 U	6 U	5 U	5 U
1,1,2-Trichloroethane		5 U	6 U	6 U	5 U	5 U
Benzene		5 U	102 %	104 %	5 U	102 %
Trans-1,3-Dichloropropene		5 U	6 U	6 U	5 U	5 U
Bromoform		5 U	6 U	6 U	5 U	5 U
4-Methyl-2-pentanone		10 U	11 U	11 U	10 U	10 U
2-Hexanone		10 U	11 U	11 U	10 U	10 U
Tetrachloroethene		5 U	6 U	6 U	5 U	5 U
1,1,2,2-Tetrachloroethane		5 U	6 U	6 U	5 U	5 U
Toluene		5 U	103 %	104 %	5 U	103 %

*= Outside of EPA CLP QC limits.

	Cust ID:	J00JD1	J00JD1	J00JD1	VBLKMT	VBLKMT BS
	RFW#:	001	001 MS	001 MSD	03LVG065-MB1	03LVG065-MB1
Chlorobenzene		5 U	106 %	106 %	5 U	103 %
Ethylbenzene		5 U	6 U	6 U	5 U	5 U
Styrene		5 U	6 U	6 U	5 U	5 U
Xylene (total)		5 U	6 U	6 U	5 U	5 U

*= Outside of EPA CLP QC limits.

Lionville Laboratory Use Only

0303L985

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI LIONVILLE LABORATORY INC.

Client TNU Hanford B00-054

Est. Final Proj. Sampling Date

Project # 11343-606-001-9999-00

Project Contact/Phone #

Lionville Laboratory Project Manager Charlotte Johnson

QC SPEC Del STD TAT 7 days

Date Rec'd 3-20-03 Date Due 3-27-03

		A
Refrigerator #		6
#/Type Container	Liquid	
	Solid	1p
Volume	Liquid	
	Solid	1L
Preservatives		—

ANALYSES REQUESTED → ORGANIC: VOA, BNA, Pest/PCB, Herb, Alcohol Glycol Ether; INORG: Metal (1), CN, pH, IC Anions

MATRIX CODES	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only: 0624H	0625H	06CSC	MET (1)	IPH	ICNO3 ICNO2 ICSO4	INJN2
S - Soil, SE - Sediment, SO - Solid, SL - Sludge, W - Water, O - Oil, A - Air, DS - Drum Solids, DL - Drum Liquids, L - EP/TCLP Leachate, WI - Wipe, X - Other, F - Fish	001	JOOJD1	X	X	S	3-18-03	1000	X	X	X	X	X	X	

Special Instructions: SAF # B00-054

DATE/REVISIONS:

MET (1)
1. Sb, Ba, Be, Cd, Cr, Cu, Mn, Ni, Ag,
2. V, Zn, As, Pb, Se, Tl, Hg
3.
4.
5.
6.

Lionville Laboratory Use Only

Samples were: 1) Shipped ✓ or Hand Delivered ___
Airbill # 8358 1726 5110
2) Ambient or Chilled
3) Received in Good Condition (Y) or N
4) Samples Properly Preserved (Y) or N
5) Received Within Holding Times (Y) or N

Tamper Resistant Seal was: 1) Present on Outer Package (Y) or N; 2) Unbroken on Outer Package (Y) or N; 3) Present on Sample (Y) or N; 4) Unbroken on Sample (Y) or N

COC Record Present Upon Sample Rec't (Y) or N

Cooler Temp. 15.6 °C

Discrepancies Between Samples Labels and COC Record? Y or (N)
NOTES:

Relinquished by	Received by	Date	Time
Heo Ex	[signature]	3-20-03	0910

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL REWRITTEN		

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B00-054-238	Page 1 of 1
Collector R B Kerkow	**Company Contact** R B Kerkow **Telephone No.** 372-2187	**Project Coordinator** TRENT, SJ	**Price Code** 8 J **Data Turnaround** 7 days
Project Designation 100-NR-1 TSD Sites R. A. Sampling - Soil	**Sampling Location** 116-N-1 Trench , Plume 8-B (container 733)	**SAF No.** B00-054	**Air Quality** ☐
Ice Chest No. ERC 01 027	**Field Logbook No.** EL 1524-3 **COA** R1301N2600	**Method of Shipment** FED EX	
Shipped To ~~TMA~~/RECRA	**Offsite Property No.** RSR 107175	**Bill of Lading/Air Bill No.** N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS
Radioactive

Special Handling and/or Storage
None

Preservation	Cool 4C	None	None	Cool 4C	None						
Type of Container	P/WM				Marinelli						
No. of Container(s)	1	1	1	1	1						
Volume	1000 mL				500mL						
SAMPLE ANALYSIS	See item (1) in Special Instructions.	pH (Soil) - 9045	IC Anions - 300.0 (Nitrate, Nitrite, Sulfate); NO2/NO3 - 353.1	Alcohols, Glycols, & Ketones - 8015M (Methanol) + SEE #3	See item (2) in Special Instructions. RK 3-18-03						

Sample No.	Matrix *	Sample Date	Sample Time									
J00JD1	SOIL	3/18/03	1000	X	X	X	X					

CHAIN OF POSSESSION

Relinquished By/~~Removed From~~	Date/Time	Received By/~~Stored In~~	Date/Time
RB KERKOW/RB Kerk	3-18-03 1650	REF 1A, RBKERKW	3-18-03 1650
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
REF 1A 31903	0900	SJGALE 31903	0900
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
SJGALE 31903	0900	FED EX	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
FedEx 3.20.03	0910	D. Smith 3.20.03	0910
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS
Lab COA: R1301N2F00

(1) ICP Metals - 6010A (TAL) {Antimony, Barium, Beryllium, Cadmium, Chromium, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP Metals - 6010A (Add-on) {Arsenic, Lead, Selenium, Thallium}; Mercury - 7471 - (CV)
~~(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}, Isotopic Plutonium, Americium-241, Strontium-89,90 - Total-Sr, Nickel-63, Tritium - H3, Isotopic Uranium, Gross Alpha, Gross Beta~~ RK 3/18/03

(3) ADD: VOA's (8260) and Semi VOA's (8270) IN SOIL. RK
NOTE: SAMPLE MATERIAL IS IN A 1-LITER PLASTIC CONTAINER. RK 3-18-03

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Personnel not available to relinquish samples from the 3728 Ref # 1A on 3/19/03 Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (03/01/2002)

LIONVILLE LABORATORY INCORPORATED
SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hanford

Purchase Order/Project:

DATE: 3-20-03

SAF# / SOW# / Release #: B00-054

Laboratory SDG #: 03031985

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

1. Custody seals on coolers or shipping container intact, signed and dated?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
2. Outside of coolers or shipping containers are free from damage?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
3. Airbill # recorded?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	☒ Yes	☐ No	☐ N/A	☐ see Comment #
5. Sample containers are intact?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
6. Custody seals on sample containers intact, signed and dated?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
7. All samples on coc received?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
8. All sample label information matches coc?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	☒ Yes	☐ No	☐ N/A	☐ see Comment #
10. Shipment meets LvLl Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	☐ Yes	☒ No	☐ N/A	☒ see Comment #
11. Where applicable, bar code labels are affixed to coc?	☐ Yes	☐ No	☒ N/A	☐ see Comment #
12. coc signed and dated?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
13. coc will be faxed or emailed to client?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
14. Project Manager/Client contacted concerning discrepancies? (name/date)	☐ Yes	☐ No	☒ N/A	☐ see Comment #

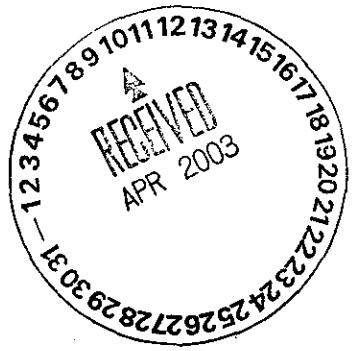
Cooler # / temp (°C) and Comments:

#ERC 01-027 / 15.6°C

#1 sample received @ 15.6°C

Laboratory Sample Custodian:

Laboratory Project Manager:



Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B00-054, H2105

DATE RECEIVED: 03/20/03 LVL LOT # :0303L985

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00JD1	001	S	03LE0335	03/18/03	03/20/03	03/21/03
J00JD1	001 MS	S	03LE0335	03/18/03	03/20/03	03/24/03
J00JD1	001 MSD	S	03LE0335	03/18/03	03/20/03	03/24/03
LAB QC:						
SBLKPW	MB1	S	03LE0335	N/A	03/20/03	03/21/03
SBLKPW	MB1 BS	S	03LE0335	N/A	03/20/03	03/21/03

LIONVILLE LABORATORY INC.

Client: TNU-HANFORD B00-054
LVL #: 0303L985
SDG/SAF # H2105/B00-054

W.O. #: 11343-606-001-9999-00
Date Received: 03-20-2003

SEMIVOLATILE

One (1) soil sample was collected on 03-18-2003.

The sample and its associated QC samples were extracted according to Lionville Laboratory OPs based on method 3550 on 03-20-2003 and analyzed according to criteria set forth in Lionville Laboratory OPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 03-21,24-2003.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from a sample that met LvLI's sample acceptance policy with the exception of a discrepancy, which has been recorded on the Sample Receipt Checklist (p-12).

2. The sample was extracted and analyzed within required holding time.

3. Non-target compounds were detected in the sample.

4. All surrogate recoveries were within EPA QC limits.

5. All blank spike recoveries were within EPA QC limits.

6. Two (2) of twenty-two (22) matrix spike recoveries were outside EPA QC limits.

7. Internal standard area and retention time criteria were met.

8. Manual integrations are performed according to OP 21-06A-125 to produce quality data with the utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration").

9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

by _____ 03-27-03

J. Michael Taylor
President
Lionville Laboratory Incorporated

Date

som\gorup\data\bna\tnu-hanford-0303-985.doc
The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 1 2 pages.

208 Welsh Pool Road • Lionville, PA 19341-1333 • (610) 280-3000 • Fax (610) 280-3041

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CB - Coelution/Background: peak was manually integrated to eliminate contribution from coeluting compounds, background signal, or other interference.

PI - Proper Integration: a peak with poor or inconsistent integration (e.g., excessive tail) was properly integrated manually.

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, HSL List

Report Date: 03/25/03 13:00

RFW Batch Number: **0303L985** Client: **TNU-HANFORD B00-054**, H2105 Work Order: 11343606001 Page: 1a

	Cust ID:	J00JD1	J00JD1	J00JD1	SBLKPW	SBLKPW BS
Sample Information	RFW#:	001	001 MS	001 MSD	03LE0335-MB1	03LE0335-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate Recovery	Nitrobenzene-d5	84 %	107 %	86 %	94 %	88 %
	2-Fluorobiphenyl	82 %	99 %	82 %	90 %	86 %
	Terphenyl-d14	110 %	132 %	111 %	128 %	118 %
	Phenol-d5	78 %	99 %	77 %	88 %	81 %
	2-Fluorophenol	77 %	97 %	78 %	86 %	80 %
	2,4,6-Tribromophenol	88 %	111 %	89 %	91 %	91 %
Phenol		370 U	96 * %	73 %	330 U	78 %
bis(2-Chloroethyl)ether		370 U	370 U	370 U	330 U	330 U
2-Chlorophenol		370 U	93 %	72 %	330 U	77 %
1,3-Dichlorobenzene		370 U	370 U	370 U	330 U	330 U
1,4-Dichlorobenzene		370 U	86 %	71 %	330 U	76 %
1,2-Dichlorobenzene		370 U	370 U	370 U	330 U	330 U
2-Methylphenol		370 U	370 U	370 U	330 U	330 U
2,2'-oxybis(1-Chloropropane)		370 U	370 U	370 U	330 U	330 U
3- and/or 4-Methylphenol		370 U	370 U	370 U	330 U	330 U
N-Nitroso-di-n-propylamine		370 U	96 %	74 %	330 U	77 %
Hexachloroethane		370 U	370 U	370 U	330 U	330 U
Nitrobenzene		370 U	370 U	370 U	330 U	330 U
Isophorone		370 U	370 U	370 U	330 U	330 U
2-Nitrophenol		370 U	370 U	370 U	330 U	330 U
2,4-Dimethylphenol		370 U	370 U	370 U	330 U	330 U
bis(2-Chloroethoxy)methane		370 U	370 U	370 U	330 U	330 U
2,4-Dichlorophenol		370 U	370 U	370 U	330 U	330 U
1,2,4-Trichlorobenzene		370 U	88 %	73 %	330 U	81 %
Naphthalene		370 U	370 U	370 U	330 U	330 U
4-Chloroaniline		370 U	370 U	370 U	330 U	330 U
Hexachlorobutadiene		370 U	370 U	370 U	330 U	330 U
4-Chloro-3-methylphenol		370 U	102 %	79 %	330 U	86 %
2-Methylnaphthalene		370 U	370 U	370 U	330 U	330 U
Hexachlorocyclopentadiene		370 U	370 U	370 U	330 U	330 U
2,4,6-Trichlorophenol		370 U	370 U	370 U	330 U	330 U
2,4,5-Trichlorophenol		920 U	920 U	920 U	840 U	840 U

*= Outside of EPA CLP QC limits.

Cust ID:	J00JD1	J00JD1	J00JD1	SBLKPW	SBLKPW BS
RFW#:	001	001 MS	001 MSD	03LE0335-MB1	03LE0335-MB1
2-Chloronaphthalene	370 U	370 U	370 U	330 U	330 U
2-Nitroaniline	920 U	920 U	920 U	840 U	840 U
Dimethylphthalate	370 U	370 U	370 U	330 U	330 U
Acenaphthylene	370 U	370 U	370 U	330 U	330 U
2,6-Dinitrotoluene	370 U	370 U	370 U	330 U	330 U
3-Nitroaniline	920 U	920 U	920 U	840 U	840 U
Acenaphthene	370 U	93 %	74 %	330 U	80 %
2,4-Dinitrophenol	920 U	920 U	920 U	840 U	840 U
4-Nitrophenol	920 U	105 %	80 %	840 U	87 %
Dibenzofuran	370 U	370 U	370 U	330 U	330 U
2,4-Dinitrotoluene	370 U	96 * %	75 %	330 U	76 %
Diethylphthalate	370 U	370 U	370 U	330 U	330 U
4-Chlorophenyl-phenylether	370 U	370 U	370 U	330 U	330 U
Fluorene	370 U	370 U	370 U	330 U	330 U
4-Nitroaniline	920 U	920 U	920 U	840 U	840 U
4,6-Dinitro-2-methylphenol	920 U	920 U	920 U	840 U	840 U
N-Nitrosodiphenylamine (1)	370 U	370 U	370 U	330 U	330 U
4-Bromophenyl-phenylether	370 U	370 U	370 U	330 U	330 U
Hexachlorobenzene	370 U	370 U	370 U	330 U	330 U
Pentachlorophenol	920 U	100 %	80 %	840 U	82 %
Phenanthrene	370 U	370 U	370 U	330 U	330 U
Anthracene	370 U	370 U	370 U	330 U	330 U
Carbazole	370 U	370 U	370 U	330 U	330 U
Di-n-butylphthalate	370 U	370 U	370 U	330 U	330 U
Fluoranthene	370 U	370 U	370 U	330 U	330 U
Pyrene	370 U	114 %	94 %	330 U	103 %
Butylbenzylphthalate	370 U	370 U	370 U	330 U	330 U
3,3'-Dichlorobenzidine	370 U	370 U	370 U	330 U	330 U
Benzo(a)anthracene	370 U	370 U	370 U	330 U	330 U
Chrysene	370 U	370 U	370 U	330 U	330 U
bis(2-Ethylhexyl)phthalate	180 J	370 U	370 U	330 U	54 J
Di-n-octyl phthalate	370 U	370 U	370 U	330 U	330 U
Benzo(b)fluoranthene	370 U	370 U	370 U	330 U	330 U
Benzo(k)fluoranthene	370 U	370 U	370 U	330 U	330 U
Benzo(a)pyrene	370 U	370 U	370 U	330 U	330 U
Indeno(1,2,3-cd)pyrene	370 U	370 U	370 U	330 U	330 U
Dibenz(a,h)anthracene	370 U	370 U	370 U	330 U	330 U
Benzo(g,h,i)perylene	370 U	370 U	370 U	330 U	330 U

(1) - Cannot be separated from Diphenylamine. *= Outside of EPA CLP QC limits.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J00JD1

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNU-HANFORD B00-054

Matrix: (soil/water) SOIL

Lab Sample ID: 0303L985-001

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: D032115

Level: (low/med) LOW

Date Received: 03/20/03

% Moisture: 10 decanted: (Y/N)__

Date Extracted: 03/20/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/21/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 6

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	3.707	100	JB
2.		ALDOL CONDENSATE	6.725	200	JAB
3.		ALDOL CONDENSATE	7.281	20000	JAB
4.	79-34-5	1,1,2,2-TERTACHLOROETHANE	8.742	100	JBN
5.		UNKNOWN	17.682	200	J
6.	7683-64-9	SQUALENE	29.595	100	JBN

1F

CLIENT SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SBLKPW

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNU-HANFORD B00-054

Matrix: (soil/water) SOIL

Lab Sample ID: 03LE0335-MB1

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: D032113

Level: (low/med) LOW

Date Received: 03/20/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 03/20/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/21/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	3.722	100	J
2.		ALDOL CONDENSATE	6.731	100	JA
3.		ALDOL CONDENSATE	7.287	20000	JA
4.	79-34-5	1,1,2,2-TETRACHLOROETHANE	8.740	80	JN
5.	7683-64-9	SQUALENE	29.601	70	JN

Lionville Laboratory Use Only

0303L985

Custody Transfer Record/Lab Work Request

Page 1 of 1

LVLI Lionville Laboratory Inc.

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU Hanford B00-054

Est. Final Proj. Sampling Date:

Project #: 11343-606-001-9999-00

Project Contact/Phone #:

Lionville Laboratory Project Manager: [signature]

QC: SPLL   Del: STD   TAT: 7 days

Date Rec'd: 3-20-03   Date Due: 3-27-03

Refrigerator #		6
#/Type Container	Liquid	
	Solid	1P
Volume	Liquid	
	Solid	1L
Preservatives		—

ANALYSES REQUESTED: ORGANIC (VOA, BNA, Pest/PCB, Herb, Alcohols Glycols Ketones); INORG (Metal (1), CN); pH; IC Anions

MATRIX CODES:
- S - Soil
- SE - Sediment
- SO - Solid
- SL - Sludge
- W - Water
- O - Oil
- A - Air
- DS - Drum Solids
- DL - Drum Liquids
- L - EP/TCLP Leachate
- WI - Wipe
- X - Other
- F - Fish

Lab ID	Client ID/Description	MS	MSD	Matrix	Date Collected	Time Collected	VOA 0624H	BNA 0625H	Pest/PCB	Herb	Alcohols Glycols Ketones 06CSC			Metal (1) MC-1	CN	pH IPH	IC Anions ICNO3 ICNO2 ICSO4 IN3N2				
001	J00JD1	X	X	S	3-18-03	1000	X	X			X			X		X	X				

Special Instructions: SAF # B00-054

DATE/REVISIONS:
MET (1)
1. Sb, Ba, Be, Cd, Cr, Cu, Mn, Ni, Ag,
2. V, Zn, As, Pb, Se, Tl, Hg
3.
4.
5.
6.

Lionville Laboratory Use Only

Samples were:
1) Shipped ✓ or Hand Delivered ___
Airbill # 8358 1726 5110
2) Ambient or Chilled (Ambient circled)
3) Received in Good Condition (Y) or N
4) Samples Properly Preserved (Y) or N
5) Received Within Holding Times (Y) or N

Tamper Resistant Seal was:
1) Present on Outer Package (Y) or N
2) Unbroken on Outer Package (Y) or N
3) Present on Sample (Y) or N
4) Unbroken on Sample (Y) or N

COC Record Present Upon Sample Rec't (Y) or N

Cooler Temp. 15.6 °C

Relinquished by	Received by	Date	Time
[signature]	[signature]	3-20-03	0910

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL REWRITTEN		

Discrepancies Between Samples Labels and COC Record? Y or (N)

NOTES:

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B00-054-238	Page 1 of 1

Collector R B Kerkow	**Company Contact** R B Kerkow	**Telephone No.** 372-2187	**Project Coordinator** TRENT, SJ
Project Designation 100-NR-1 TSD Sites R. A. Sampling - Soil	**Sampling Location** 116-N-1 Trench , Plume 8-B (container 733)		**SAF No.** B00-054
Ice Chest No. ERC 01 027	**Field Logbook No.** EL 1524-3	**COA** R1301N2600	**Method of Shipment** FED EX
Shipped To ~~TMA~~/RECRA	**Offsite Property No.** RSR 107175		**Bill of Lading/Air Bill No.** N/A

Price Code 8 J **Data Turnaround** 7 days

Air Quality ☐

POSSIBLE SAMPLE HAZARDS/REMARKS

Radioactive

Special Handling and/or Storage

None

Preservation	Cool 4C	None	None	Cool 4C	None					
Type of Container	P/WM	G	G	G	Marinelli					
No. of Container(s)	1	1	1	1	1					
Volume	1000 mL				500mL					
SAMPLE ANALYSIS	See item (1) in Special Instructions.	pH (Soil) - 9045	IC Anions - 300.0 (Nitrate, Nitrite, Sulfate); NO2/NO3 - 353.1	Alcohols, Glycols, & Ketones - 8015M (Methanol) *SEE #3	See item (2) in Special Instructions.					
Sample No.	Matrix *	Sample Date	Sample Time							
J00JD1	SOIL	3/18/03	1000	X	X	X	X			

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/~~Removed From~~	Date/Time 1650	~~Received By~~/Stored In	Date/Time 1650
RB KERKOW/RB Kerkow	3-18-03	REF 1A. RBKERKOW	3-18-03
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
REF 1A 31903	0900	SJGALE 31903	0900
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
SJGALE 31903	0900	FED EX	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
FedEx 3.20.03	0910	D. Mann	3.20.03/0910
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

Lab COA: R1301N2F00

(1) ICP Metals - 6010A (TAL) {Antimony, Barium, Beryllium, Cadmium, Chromium, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP Metals - 6010A (Add-on) {Arsenic, Lead, Selenium, Thallium}; Mercury - 7471 - (CV)

~~(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Isotopic Plutonium, Americium-241, Strontium-89,90 - Total-Sr, Nickel-63, Tritium - H3, Isotopic Uranium, Gross Alpha, Gross Beta~~ RK 3/18/03

(3) ADD: VOA's (8260) and SEMI VOA's (8270) IN SOIL - RK

NOTE: SAMPLE MATERIAL IS IN A 1-LITER PLASTIC CONTAINER. RK 3-18-03

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Personnel not available to relinquish samples from the 3728 Ref # 1A on 3/19/03

BHI-EE-011 (03/01/2002)

LIONVILLE LABORATORY INCORPORATED
SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hanford

Purchase Order/Project:

DATE: 3-20-03

SAF# / SOW# / Release #: B00-054

Laboratory SDG #: 03031985

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

1.	Custody seals on coolers or shipping container intact, signed and dated?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
2.	Outside of coolers or shipping containers are free from damage?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
3.	Airbill # recorded?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
4.	All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	☒ Yes	☐ No	☐ N/A	☐ see Comment #
5.	Sample containers are intact?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
6.	Custody seals on sample containers intact, signed and dated?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
7.	All samples on coc received?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
8.	All sample label information matches coc?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
9.	Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	☒ Yes	☐ No	☐ N/A	☐ see Comment #
10.	Shipment meets LvL1 Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	☐ Yes	☒ No	☐ N/A	☒ see Comment # 1
11.	Where applicable, bar code labels are affixed to coc?	☐ Yes	☐ No	☒ N/A	☐ see Comment #
12.	coc signed and dated?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
13.	coc will be faxed or emailed to client?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
14.	Project Manager/Client contacted concerning discrepancies? (name/date)	☐ Yes	☐ No	☒ N/A	☐ see Comment #

Cooler # / temp (°C) and Comments:

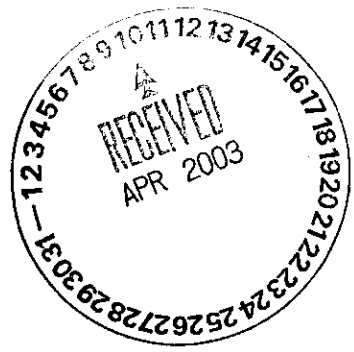
#ERC 01-027 / 15.6°C

#1 sample received 15.6°C

Laboratory Sample Custodian: [signature]

Laboratory Project Manager:

12



Lionville Laboratory, Inc.
GCSC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B00-054 H2105

DATE RECEIVED: 03/20/03 LVL LOT # :0303L985

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00JD1	001	S	03LE0360	03/18/03	03/26/03	03/26/03
J00JD1	001 MS	S	03LE0360	03/18/03	03/26/03	03/26/03
J00JD1	001 MSD	S	03LE0360	03/18/03	03/26/03	03/26/03
LAB QC:						
BLK	MB1	S	03LE0360	N/A	03/26/03	03/26/03
BLK	MB1 BS	S	03LE0360	N/A	03/26/03	03/26/03

3/27/03

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU HANFORD B00-054
LVL#: 0303L985
SDG/SAF#: H2105/B00-054

W.O.#: 11343-606-001-9999-00
Date Received: 03-20-2003

GC SCAN

One (1) soil sample was collected on 03-18-2003.

The sample and its associated QC samples were analyzed on 03-26-2003 according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures based on method 8015B for Methanol.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from a sample that met LvLI's sample acceptance policy with the exception of a discrepancy, which has been recorded on the Sample Receipt Checklist (p-8).

2. The sample was analyzed within required holding time.

3. The method blank was below the reporting limit for the target compound.

4. Surrogates are not currently employed in the methodology.

5. The blank spike recovery was within acceptance criteria.

6. The matrix spike recoveries were within acceptance criteria.

7. All initial calibrations were within acceptance criteria.

8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

3/31/03
Date

r:\group\data\gcsc\tunu\0303-985.doc

208 Welsh Pool Road • Lionville, PA 19341-1333 • (610) 280-3000 • Fax (610) 280-3041

GLOSSARY OF GC SCAN DATA

DATA QUALIFIERS

U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).

J = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.

E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.

I = Interference.

ABBREVIATIONS

BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.

NA = Not Applicable.

DF = Dilution Factor.

NR = Not Required.

SP = Indicates Spiked Compound.

GLOSSARY OF GC SCAN DATA

P = This flag is used for an GC SCAN target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".

D = This flag identifies all compounds identified in an analysis at a secondary dilution factor.

C = This flag applies to a compound that has been confirmed by GC SCAN.

Lionville Laboratory, Inc.

GC SCAN

Report Date: 03/27/03 14:19

RFW Batch Number: **0303L985** Client: **TNUHANFORD B00-054 H2105** Work Order: 11343606001 Page: 1

	Cust ID:	J00JD1	J00JD1	J00JD1	BLK	BLK BS
Sample Information	RFW#:	001	001 MS	001 MSD	03LE0360-MB1	03LE0360-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00
	Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg

		fl		fl		fl		fl		fl		fl
Methanol	26	U	92	%	91	%	25	U	94	%		

3/27/03

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Lionville Laboratory Use Only

03031985

Custody Transfer Record/Lab Work Request

Page ___ of ___

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI LIONVILLE LABORATORY INC.

Client TNU Hanford B00-054

Est. Final Proj. Sampling Date

Project # 11343-606-001-9999-00

Project Contact/Phone #

Lionville Laboratory Project Manager Charlotte Johnson

QC SPEC Del STD TAT 7 days

Date Rec'd 3-20-03 Date Due 3-27-03

		A
Refrigerator #		6
#/Type Container	Liquid	
	Solid	1p
Volume	Liquid	
	Solid	1L
Preservatives		—

ANALYSES REQUESTED →

ORGANIC: VOA | BNA | Pest/PCB | Herb | Alcohols Glycols Ketones

INORG: Metal (1) | CN

pH | IC Anions

Lionville Laboratory Use Only

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0624H	0625H			0GCSC			MET①			EPH	IcNO3 IcNO2 IcSO4	IN3N2
001	J00JD1	X	X	S	3-18-03	1000	X	X			X			X			X	X	

Special Instructions: SAF # B00-054

DATE/REVISIONS:

MET① 1. Sb, Ba, Be, Cd, Cr, Cu, Mn, Ni, Ag,

2. V, Zn, As, Pb, Se, Tl, Hg

3.

4.

5.

6.

Relinquished by	Received by	Date	Time
Heidi Ea	D. Johnson	3-20-03	0910

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL REWRITTEN		

Discrepancies Between *Samples* Labels and COC Record? Y or (N)

NOTES:

Lionville Laboratory Use Only

Samples were:
1) Shipped ✓ or Hand Delivered ___
Airbill # 835817265110
2) (Ambient) or Chilled
3) Received in Good Condition (Y) or N
4) Samples Properly Preserved (Y) or N
5) Received Within Holding Times (Y) or N

Tamper Resistant Seal was:
1) Present on Outer Package (Y) or N
2) Unbroken on Outer Package (Y) or N
3) Present on Sample (Y) or N
4) Unbroken on Sample (Y) or N
COC Record Present Upon Sample Rec't (Y) or N
Cooler Temp. 15.6 °C

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B00-054-238	Page 1 of 1
Collector R B Kerkow	Company Contact: R B Kerkow — Telephone No.: 372-2187	Project Coordinator: TRENT, SJ	Price Code 8J — Data Turnaround 7 days
Project Designation 100-NR-1 TSD Sites R. A. Sampling - Soil	Sampling Location 116-N-1 Trench , Plume 8-B (container 733)	SAF No. B00-054	Air Quality ☐
Ice Chest No. ERC 01 027	Field Logbook No. EL 1524-3 — COA R1301N2600	Method of Shipment FED EX	
Shipped To ~~TMA~~/RECRA	Offsite Property No. RSR 107175	Bill of Lading/Air Bill No. N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS
Radioactive

Special Handling and/or Storage
None

Preservation				Cool 4C	None	None	Cool 4C	None	
Type of Container				P/WM	~~G~~ RK	~~G~~ RK	~~G~~ RK	Marinelli	
No. of Container(s)				1	1	1	1	1	
Volume				~~60mL~~ 1000 mL	~~[illegible]~~ 3/18/03	~~[illegible]~~ 3/18/03	~~[illegible]~~	500mL	
SAMPLE ANALYSIS				See item (1) in Special Instructions.	pH (Soil) - 9045	IC Anions - 300.0 {Nitrate, Nitrite, Sulfate}; NO2/NO3 - 353.1	Alcohols, Glycols, & Ketones - 8015M {Methanol} *SEE #3	See item (2) in Special Instructions. RK 3/18/03	
Sample No.	Matrix *	Sample Date	Sample Time						
J00JD1	SOIL	3/18/03	1000	X	X	X	X		

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/~~Removed From~~	Date/Time	~~Received By~~/Stored In	Date/Time
RB KERKOW / RB Kerkow	3-18-03 1650	REF 1A, RBKERKOW	3-18-03 1650
REF 1A 31903	0900	SJGALE [signature]	31903 0900
SSGALE [signature] 31903	0900	FED EX	
FedEx	3-20-03/0910	D. [signature]	3-20-03/0910

SPECIAL INSTRUCTIONS
Lab COA: R1301N2F00

(1) ICP Metals - 6010A (TAL) {Antimony, Barium, Beryllium, Cadmium, Chromium, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP Metals - 6010A (Add-on) {Arsenic, Lead, Selenium, Thallium}; Mercury - 7471 - (CV)
~~(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Isotopic Plutonium, Americium-241, Strontium-89,90 -- Total Sr, Nickel-63, Tritium - H3, Isotopic Uranium, Gross Alpha, Gross Beta~~ RK 3/18/03

(3) ADD: VOA's (8260) and SEMI VOA's (8270) IN SOIL RK

NOTE: SAMPLE MATERIAL IS IN A 1-LITER PLASTIC CONTAINER. RK 3-18-03

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
	Personnel not available to relinquish samples from the 3728 Ref # 1A on 3/19/03		
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (03/01/2002)

LIONVILLE LABORATORY INCORPORATED
SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hanford

Purchase Order/Project:

DATE: 3.20.03

(SAF#) / SOW# / Release #: 600-054

Laboratory SDG #: 0303L985

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

1.	Custody seals on coolers or shipping container intact, signed and dated?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
2.	Outside of coolers or shipping containers are free from damage?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
3.	Airbill # recorded?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
4.	All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	☒ Yes	☐ No	☐ N/A	☐ see Comment #
5.	Sample containers are intact?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
6.	Custody seals on sample containers intact, signed and dated?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
7.	All samples on coc received?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
8.	All sample label information matches coc?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
9.	Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	☒ Yes	☐ No	☐ N/A	☐ see Comment #
10.	Shipment meets LvLI Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	☐ Yes	☒ No	☐ N/A	☒ see Comment #
11.	Where applicable, bar code labels are affixed to coc?	☐ Yes	☐ No	☒ N/A	☐ see Comment #
12.	coc signed and dated?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
13.	coc will be faxed or emailed to client?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
14.	Project Manager/Client contacted concerning discrepancies? (name/date)	☐ Yes	☐ No	☒ N/A	☐ see Comment #

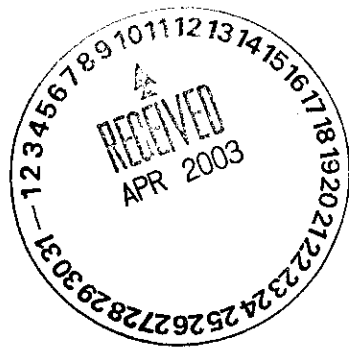
Cooler # / temp (°C) and Comments:

#ERC 01-027 / 15.6°C

#1 sample received 15.6°C

Laboratory Sample Custodian: [signature]

Laboratory Project Manager:



Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B00-054 H2105

DATE RECEIVED: 03/20/03 LVL LOT # :0303L985

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00JD1						
SILVER, TOTAL	001	S	03L0157	03/18/03	03/25/03	03/26/03
SILVER, TOTAL	001 REP	S	03L0157	03/18/03	03/25/03	03/26/03
SILVER, TOTAL	001 MS	S	03L0157	03/18/03	03/25/03	03/26/03
ARSENIC, TOTAL	001	S	03L0157	03/18/03	03/25/03	03/26/03
ARSENIC, TOTAL	001 REP	S	03L0157	03/18/03	03/25/03	03/26/03
ARSENIC, TOTAL	001 MS	S	03L0157	03/18/03	03/25/03	03/26/03
BARIUM, TOTAL	001	S	03L0157	03/18/03	03/25/03	03/26/03
BARIUM, TOTAL	001 REP	S	03L0157	03/18/03	03/25/03	03/26/03
BARIUM, TOTAL	001 MS	S	03L0157	03/18/03	03/25/03	03/26/03
BERYLLIUM, TOTAL	001	S	03L0157	03/18/03	03/25/03	03/26/03
BERYLLIUM, TOTAL	001 REP	S	03L0157	03/18/03	03/25/03	03/26/03
BERYLLIUM, TOTAL	001 MS	S	03L0157	03/18/03	03/25/03	03/26/03
CADMIUM, TOTAL	001	S	03L0157	03/18/03	03/25/03	03/26/03
CADMIUM, TOTAL	001 REP	S	03L0157	03/18/03	03/25/03	03/26/03
CADMIUM, TOTAL	001 MS	S	03L0157	03/18/03	03/25/03	03/26/03
CHROMIUM, TOTAL	001	S	03L0157	03/18/03	03/25/03	03/26/03
CHROMIUM, TOTAL	001 REP	S	03L0157	03/18/03	03/25/03	03/26/03
CHROMIUM, TOTAL	001 MS	S	03L0157	03/18/03	03/25/03	03/26/03
COPPER, TOTAL	001	S	03L0157	03/18/03	03/25/03	03/26/03
COPPER, TOTAL	001 REP	S	03L0157	03/18/03	03/25/03	03/26/03
COPPER, TOTAL	001 MS	S	03L0157	03/18/03	03/25/03	03/26/03
MERCURY, TOTAL	001	S	03C0058	03/18/03	03/24/03	03/24/03
MERCURY, TOTAL	001 REP	S	03C0058	03/18/03	03/24/03	03/24/03
MERCURY, TOTAL	001 MS	S	03C0058	03/18/03	03/24/03	03/24/03
MANGANESE, TOTAL	001	S	03L0157	03/18/03	03/25/03	03/26/03
MANGANESE, TOTAL	001 REP	S	03L0157	03/18/03	03/25/03	03/26/03
MANGANESE, TOTAL	001 MS	S	03L0157	03/18/03	03/25/03	03/26/03
NICKEL, TOTAL	001	S	03L0157	03/18/03	03/25/03	03/26/03
NICKEL, TOTAL	001 REP	S	03L0157	03/18/03	03/25/03	03/26/03
NICKEL, TOTAL	001 MS	S	03L0157	03/18/03	03/25/03	03/26/03
LEAD, TOTAL	001	S	03L0157	03/18/03	03/25/03	03/26/03
LEAD, TOTAL	001 REP	S	03L0157	03/18/03	03/25/03	03/26/03
LEAD, TOTAL	001 MS	S	03L0157	03/18/03	03/25/03	03/26/03
ANTIMONY, TOTAL	001	S	03L0157	03/18/03	03/25/03	03/26/03
ANTIMONY, TOTAL	001 REP	S	03L0157	03/18/03	03/25/03	03/26/03

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B00-054 H2105

DATE RECEIVED: 03/20/03 LVL LOT # :0303L985

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ANTIMONY, TOTAL	001 MS	S	03L0157	03/18/03	03/25/03	03/26/03
SELENIUM, TOTAL	001	S	03L0157	03/18/03	03/25/03	03/26/03
SELENIUM, TOTAL	001 REP	S	03L0157	03/18/03	03/25/03	03/26/03
SELENIUM, TOTAL	001 MS	S	03L0157	03/18/03	03/25/03	03/26/03
THALLIUM, TOTAL	001	S	03L0157	03/18/03	03/25/03	03/26/03
THALLIUM, TOTAL	001 REP	S	03L0157	03/18/03	03/25/03	03/26/03
THALLIUM, TOTAL	001 MS	S	03L0157	03/18/03	03/25/03	03/26/03
VANADIUM, TOTAL	001	S	03L0157	03/18/03	03/25/03	03/26/03
VANADIUM, TOTAL	001 REP	S	03L0157	03/18/03	03/25/03	03/26/03
VANADIUM, TOTAL	001 MS	S	03L0157	03/18/03	03/25/03	03/26/03
ZINC, TOTAL	001	S	03L0157	03/18/03	03/25/03	03/26/03
ZINC, TOTAL	001 REP	S	03L0157	03/18/03	03/25/03	03/26/03
ZINC, TOTAL	001 MS	S	03L0157	03/18/03	03/25/03	03/26/03

LAB QC:

SILVER LABORATORY	LC1 BS	S	03L0157	N/A	03/25/03	03/26/03
SILVER, TOTAL	MB1	S	03L0157	N/A	03/25/03	03/26/03
ARSENIC LABORATORY	LC1 BS	S	03L0157	N/A	03/25/03	03/26/03
ARSENIC, TOTAL	MB1	S	03L0157	N/A	03/25/03	03/26/03
BARIUM LABORATORY	LC1 BS	S	03L0157	N/A	03/25/03	03/26/03
BARIUM, TOTAL	MB1	S	03L0157	N/A	03/25/03	03/26/03
BERYLLIUM LABORATORY	LC1 BS	S	03L0157	N/A	03/25/03	03/26/03
BERYLLIUM, TOTAL	MB1	S	03L0157	N/A	03/25/03	03/26/03
CADMIUM LABORATORY	LC1 BS	S	03L0157	N/A	03/25/03	03/26/03
CADMIUM, TOTAL	MB1	S	03L0157	N/A	03/25/03	03/26/03
CHROMIUM LABORATORY	LC1 BS	S	03L0157	N/A	03/25/03	03/26/03
CHROMIUM, TOTAL	MB1	S	03L0157	N/A	03/25/03	03/26/03
COPPER LABORATORY	LC1 BS	S	03L0157	N/A	03/25/03	03/26/03
COPPER, TOTAL	MB1	S	03L0157	N/A	03/25/03	03/26/03
MERCURY LABORATORY	LC1 BS	S	03C0058	N/A	03/24/03	03/24/03
MERCURY, TOTAL	MB1	S	03C0058	N/A	03/24/03	03/24/03
MANGANESE LABORATORY	LC1 BS	S	03L0157	N/A	03/25/03	03/26/03
MANGANESE, TOTAL	MB1	S	03L0157	N/A	03/25/03	03/26/03
NICKEL LABORATORY	LC1 BS	S	03L0157	N/A	03/25/03	03/26/03
NICKEL, TOTAL	MB1	S	03L0157	N/A	03/25/03	03/26/03
LEAD LABORATORY	LC1 BS	S	03L0157	N/A	03/25/03	03/26/03
LEAD, TOTAL	MB1	S	03L0157	N/A	03/25/03	03/26/03

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B00-054 H2105

DATE RECEIVED: 03/20/03 LVL LOT # :0303L985

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ANTIMONY LABORATORY	LC1 BS	S	03L0157	N/A	03/25/03	03/26/03
ANTIMONY, TOTAL	MB1	S	03L0157	N/A	03/25/03	03/26/03
SELENIUM LABORATORY	LC1 BS	S	03L0157	N/A	03/25/03	03/26/03
SELENIUM, TOTAL	MB1	S	03L0157	N/A	03/25/03	03/26/03
THALLIUM LABORATORY	LC1 BS	S	03L0157	N/A	03/25/03	03/26/03
THALLIUM, TOTAL	MB1	S	03L0157	N/A	03/25/03	03/26/03
VANADIUM LABORATORY	LC1 BS	S	03L0157	N/A	03/25/03	03/26/03
VANADIUM, TOTAL	MB1	S	03L0157	N/A	03/25/03	03/26/03
ZINC LABORATORY	LC1 BS	S	03L0157	N/A	03/25/03	03/26/03
ZINC, TOTAL	MB1	S	03L0157	N/A	03/25/03	03/26/03

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD B00-054
LVL#: 0303L985
SDG/SAF#: H2105/B00-054

W.O.#: 11343-606-001-9999-00
Date Received: 03-20-03

METALS CASE NARRATIVE

1. This narrative covers the analyses of 1 soil sample.

2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary.

3. All analyses were performed within the required holding times.

4. Please refer to the Sample Receipt Check List for sample discrepancies in LvLI's sample acceptance policy.

5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury).

6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the PQL).

7. All preparation/method blanks (MB) were within method criteria {less than the Practical Quantitation Limit (3X the IDL), MB value less than 5% of the RCRA limit, or samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.

8. All ICP Interference Check Standards were within control limits.

9. All laboratory control samples (LCS) were within the 80-120% control limits. Refer to the Inorganics Laboratory Control Standards Report.

10. The matrix spike (MS) recoveries for 2 analytes were outside the 75-125% control limits. Refer to the Inorganics Accuracy Report.

11. For analytes where the ICP MS is out-of-control, a post-digestion MS (PDS) and serial dilution are performed. A PDS was prepared at meaningful concentration level for the following analytes:

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J00JD1	Manganese	1000	109.7
	Antimony	100	107.6

12. The duplicate analyses for 5 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

13. For the purposes of this report, the data has been reported to the Instrument Detection Limit (IDL). Values between the IDL and the Practical Quantitation Limit (PQL) are acquired in a region of less-certain quantification.

14. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Pat C

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

01-01-03
Date

jjw/m03-985

LVLI
LIONVILLE LABORATORY INC.

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within this Lot#: 0303L985

Leaching Procedure: __1310 __1311 __1312 __Other:_____

CLP Metals __ Digestion and __ Analysis Methods: __ILM03.0 __ILM04.0

Metals Digestion Methods: __3005A __3010A __3015 __3020A X3050B __3051 __200.7 __SS17
__Other: _____

Metals Analysis Methods

	SW846		EPA		STD MTD	EPA OSWR	USATHAMA
Aluminum	__6010B		__200.7				__99
Antimony	X6010B	__7041 [5]	__200.7	__204.2			__99
Arsenic	X6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
Barium	X6010B		__200.7				__99
Beryllium	X6010B		__200.7				__99
Bismuth	__6010B [1]		__200.7 [1]			__1620	__99
Boron	__6010B		__200.7				__99
Cadmium	X6010B	__7131A [5]	__200.7	__213.2			__99
Calcium	__6010B		__200.7				__99
Chromium	X6010B	__7191 [5]	__200.7	__218.2			__SS17
Cobalt	__6010B		__200.7				__99
Copper	X6010B	__7211 [5]	__200.7	__220.2			__99
Iron	__6010B		__200.7				__99
Lead	X6010B	__7421 [5]	__200.7	__239.2	__3113B		__99
Lithium	__6010B	__7430 [4]	__200.7			__1620	__99
Magnesium	__6010B		__200.7				__99
Manganese	X6010B		__200.7				__99
Mercury	__7470A [3]	X7471A [3]	__245.1 [2]	__245.5 [2]			__99
Molybdenum	__6010B		__200.7				__99
Nickel	X6010B		__200.7				__99
Potassium	__6010B	__7610 [4]	__200.7	__258.1 [4]			__99
Rare Earths	__6010B [1]		__200.7 [1]			__1620	__99
Selenium	X6010B	__7740 [5]	__200.7	__270.2	__3113B		__99
Silicon	__6010B [1]		__200.7			__1620	__99
Silica	__6010B		__200.7			__1620	__99
Silver	X6010B	__7761 [5]	__200.7	__272.2			__99
Sodium	__6010B	__7770 [4]	__200.7	__273.1 [4]			__99
Strontium	__6010B		__200.7				__99
Thallium	X6010B	__7841 [5]	__200.7	__279.2	__200.9		__99
Tin	__6010B		__200.7				__99
Titanium	__6010B		__200.7				__99
Uranium	__6010B [1]		__200.7 [1]			__1620	__99
Vanadium	X6010B		__200.7				__99
Zinc	X6010B		__200.7				__99
Zirconium	__6010B [1]		__200.7 [1]			__1620	__99

Other:_____ **Method:**_____

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

* = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

MB = Method or Preparation Blank.
MS = Matrix Spike.
MSD = Matrix Spike Duplicate.
REP = Sample Replicate
LCS = Laboratory Control Sample.
NC = Not calculated.

ANALYTICAL METAL METHODS

1. Not included in the method element list.

2. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, approximately 0.3 grams of sample is taken to a final volume of 50 mL (including all reagents).

3. Flame AA.

4. Graphite Furnace AA.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 03/27/03

CLIENT: TNUHANFORD B00-054 H2105 LVL LOT #: 0303L985

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J00JD1	Silver, Total	0.09 u	MG/KG	0.09	1.0
		Arsenic, Total	3.1	MG/KG	0.39	1.0
		Barium, Total	49.5	MG/KG	0.01	1.0
		Beryllium, Total	0.10	MG/KG	0.01	1.0
		Cadmium, Total	0.1	MG/KG	0.04	1.0
		Chromium, Total	11.9	MG/KG	0.07	1.0
		Copper, Total	16.4	MG/KG	0.07	1.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Manganese, Total	285	MG/KG	0.02	1.0
		Nickel, Total	12.2	MG/KG	0.20	1.0
		Lead, Total	3.6	MG/KG	0.29	1.0
		Antimony, Total	0.28 u	MG/KG	0.28	1.0
		Selenium, Total	0.40 u	MG/KG	0.40	1.0
		Thallium, Total	0.53	MG/KG	0.40	1.0
		Vanadium, Total	39.4	MG/KG	0.01	1.0
		Zinc, Total	40.0	MG/KG	0.15	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 03/27/03

CLIENT: TNUHANFORD B00-054 H2105 LVL LOT #: 0303L985

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	03L0157-MB1	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	0.35 u	MG/KG	0.35	1.0
		Barium, Total	0.03	MG/KG	0.01	1.0
		Beryllium, Total	0.03	MG/KG	0.01	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	0.06 u	MG/KG	0.06	1.0
		Copper, Total	0.06 u	MG/KG	0.06	1.0
		Manganese, Total	0.02	MG/KG	0.02	1.0
		Nickel, Total	0.18 u	MG/KG	0.18	1.0
		Lead, Total	0.26 u	MG/KG	0.26	1.0
		Antimony, Total	0.25 u	MG/KG	0.25	1.0
		Selenium, Total	0.36 u	MG/KG	0.36	1.0
		Thallium, Total	0.36 u	MG/KG	0.36	1.0
		Vanadium, Total	0.22	MG/KG	0.01	1.0
		Zinc, Total	0.94	MG/KG	0.14	1.0
BLANK1	03C0058-MB1	Mercury, Total	0.02 u	MG/KG	0.02	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 03/27/03

CLIENT: TNUHANFORD B00-054 H2105 LVL LOT #: 0303L985

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J00JD1	Silver, Total	5.0	0.09u	5.3	94.3	1.0
		Arsenic, Total	208	3.1	210	97.3	1.0
		Barium, Total	248	49.5	210	94.5	1.0
		Beryllium, Total	5.1	0.10	5.3	94.3	1.0
		Cadmium, Total	5.2	0.1	5.3	96.3	1.0
		Chromium, Total	33.5	11.9	21.0	102.9	1.0
		Copper, Total	42.0	16.4	26.3	97.3	1.0
		Mercury, Total	0.15	0.01u	0.15	105.5	1.0
		Manganese, Total	353	285	52.5	130.7*	1.0
		Nickel, Total	65.2	12.2	52.5	101.0	1.0
		Lead, Total	54.4	3.6	52.5	96.8	1.0
		Antimony, Total	26.1	0.28u	52.5	49.7	1.0
		Selenium, Total	203	0.40u	210	96.5	1.0
		Thallium, Total	202	0.53	210	95.9	1.0
		Vanadium, Total	90.5	39.4	52.5	97.3	1.0
		Zinc, Total	91.6	40.0	52.5	98.3	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 03/27/03

CLIENT: TNUHANFORD B00-054 H2105 LVL LOT #: 0303L985

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J00JD1	Silver, Total	0.09u	0.08u	NC	1.0
		Arsenic, Total	3.1	3.7	17.6	1.0
		Barium, Total	49.5	48.7	1.6	1.0
		Beryllium, Total	0.10	0.14	29.3	1.0
		Cadmium, Total	0.1	0.14	38.4	1.0
		Chromium, Total	11.9	16.6	33.0	1.0
		Copper, Total	16.4	17.2	4.8	1.0
		Mercury, Total	0.01u	0.02u	NC	1.0
		Manganese, Total	285	307	7.5	1.0
		Nickel, Total	12.2	15.2	21.9	1.0
		Lead, Total	3.6	3.7	2.7	1.0
		Antimony, Total	0.28u	0.26u	NC	1.0
		Selenium, Total	0.40u	0.37u	NC	1.0
		Thallium, Total	0.53	0.37u	~~NC~~ zero	1.0
		Vanadium, Total	39.4	44.4	11.9	1.0
		Zinc, Total	40.0	43.2	7.7	1.0

MJ 3/28/03

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 03/27/03

CLIENT: TNUHANFORD B00-054 H2105 LVL LOT #: 0303L985

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	03L0157-LC1	Silver, LCS	50.5	50.0	MG/KG	101.0
		Arsenic, LCS	995	1000	MG/KG	99.5
		Barium, LCS	514	500	MG/KG	102.8
		Beryllium, LCS	24.5	25.0	MG/KG	98.0
		Cadmium, LCS	25.6	25.0	MG/KG	102.4
		Chromium, LCS	51.7	50.0	MG/KG	103.4
		Copper, LCS	128	125	MG/KG	102.8
		Manganese, LCS	78.3	75.0	MG/KG	104.4
		Nickel, LCS	208	200	MG/KG	104.0
		Lead, LCS	254	250	MG/KG	101.7
		Antimony, LCS	303	300	MG/KG	100.9
		Selenium, LCS	962	1000	MG/KG	96.2
		Thallium, LCS	1000	1000	MG/KG	100.3
		Vanadium, LCS	257	250	MG/KG	102.9
		Zinc, LCS	102	100	MG/KG	102.1
LCS1	03C0058-LC1	Mercury, LCS	7.1	6.2	MG/KG	113.6

Lionville Laboratory Use Only
0303L985

Custody Transfer Record/Lab Work Request

Page 1 of 1

LvLI Lionville Laboratory Inc

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client TNU Hanford B00-054

Est. Final Proj. Sampling Date

Project # 11347-606-001-9999-00

Project Contact/Phone #

Lionville Laboratory Project Manager [illegible signature]

QC SPCL Del STD TAT 7days

Date Rec'd 3-20-03 Date Due 3-27-03

Refrigerator #	6
#/Type Container Liquid	
#/Type Container Solid	1p — 1
Volume Liquid	
Volume Solid	1L —
Preservatives	—

ANALYSES REQUESTED → ORGANIC: VOA, BNA, Pest/PCB, Herb, Alcohols Glycols Ketones; INORG: Metal (1), CN; pH; IC Anions

Lionville Laboratory Use Only

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	MS	MSD	Matrix	Date Collected	Time Collected	VOA (0624H)	BNA (0625H)	Pest/PCB	Herb	Alcohols Glycols Ketones (OGCSC)		Metal (1) (MC-1)	CN	pH (IPH)	IC Anions (ICNO3 ICNO2 ICSO4 IN3N2)				
001	J00JD1	X	X	S	3-18-03	1000	X	X			X		X		X	X				

Special Instructions: SAF # B00-054

DATE/REVISIONS:
MET (1) 1. Sb, Ba, Be, Cd, Cr, Cu, Mn, Ni, Ag,
2. V, Zn, As, Pb, Se, Tl, Hg
3.
4.
5.
6.

Lionville Laboratory Use Only

Samples were:
1) Shipped ✓ or Hand Delivered ___
Airbill # 8358 1726 5110
2) (Ambient) or Chilled
3) Received in Good Condition (Y) or N
4) Samples Properly Preserved (Y) or N
5) Received Within Holding Times (Y) or N

Tamper Resistant Seal was:
1) Present on Outer Package (Y) or N
2) Unbroken on Outer Package (Y) or N
3) Present on Sample (Y) or N
4) Unbroken on Sample (Y) or N
COC Record Present Upon Sample Rec't (Y) or N
Cooler Temp. 15.6 °C

Relinquished by	Received by	Date	Time
[signature]	[signature]	3-20-03	0910

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL REWRITTEN		

Discrepancies Between Samples Labels and COC Record? Y or (N)
NOTES:

13

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B00-054-238	Page 1 of 1
Collector R B Kerkow	**Company Contact** R B Kerkow **Telephone No.** 372-2187	**Project Coordinator** TRENT, SJ	**Price Code** 8 J **Data Turnaround**
Project Designation 100-NR-1 TSD Sites R. A. Sampling - Soil	**Sampling Location** 116-N-1 Trench , Plume 8-B (container 733)	**SAF No.** B00-054	**Air Quality** ☐ 7 days
Ice Chest No. ERC 01 027	**Field Logbook No.** EL 1524-3 **COA** R1301N2600	**Method of Shipment** FED EX	
Shipped To ~~TMA~~/RECRA	**Offsite Property No.** RSR 107175	**Bill of Lading/Air Bill No.** N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS
Radioactive

Special Handling and/or Storage
None

Preservation	Cool 4C	None	None	Cool 4C	None						
Type of Container	P/WM	G	G	G	Marinelli						
No. of Container(s)	1	1	1	1	1						
Volume	~~60mL~~ 1000 mL				500mL						
SAMPLE ANALYSIS	See item (1) in Special Instructions.	pH (Soil) - 9045	IC Anions - 300.0 (Nitrate, Nitrite, Sulfate); NO2/NO3 - 353.1	Alcohols, Glycols, & Ketones - 8015M (Methanol) + SEE #3	See item (2) in Special Instructions. RK 3-18-03						
Sample No.	**Matrix ***	**Sample Date**	**Sample Time**								
J00JD1	SOIL	3/18/03	1000	X	X	X	X				

CHAIN OF POSSESSION

Relinquished By/~~Removed From~~	Date/Time	Sign/Print Names: Received By/~~Stored In~~	Date/Time
RB KERKOW/RB Kerkow	3-18-03 1650	REF 1A, RBKERKW	3-18-03 1650
Relinquished By/Removed From: REF 1A 31903	Date/Time: 0900	Received By/Stored In: SJGALE	Date/Time: 31903 0900
Relinquished By/Removed From: SJGALE 31903	Date/Time: 0900	Received By/Stored In: FED EX	Date/Time
Relinquished By/Removed From: FedEx 3-20-03/0910	Date/Time	Received By/Stored In: D. Smith 3-20-03/0910	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS
Lab COA: R1301N2F00

(1) ICP Metals - 6010A (TAL) {Antimony, Barium, Beryllium, Cadmium, Chromium, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP Metals - 6010A (Add-on) {Arsenic, Lead, Selenium, Thallium}; Mercury - 7471 - (CV)
~~(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-153, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Isotopic Plutonium, Americium-241, Strontium-89,90 -- Total-Sr, Nickel-63, Tritium - H3, Isotopic Uranium, Gross Alpha, Gross Beta~~ RK 3/18/03

(3) ADD: VOA's (8260) and SEMI VOA's (8270) IN SOIL. RK
NOTE: SAMPLE MATERIAL IS IN A 1-LITER PLASTIC CONTAINER. RK 3-18-03

Matrix *
S=Soil
SD=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Personnel not available to relinquish samples from the 3728 Ref # 1A on 3/19/03 Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

LIONVILLE LABORATORY INCORPORATED
SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hanford

Purchase Order/Project:

DATE: 3-20-03

SAF# / SOW# / Release #: B00-054

Laboratory SDG #: 03031985

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

1.	Custody seals on coolers or shipping container intact, signed and dated?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
2.	Outside of coolers or shipping containers are free from damage?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
3.	Airbill # recorded?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
4.	All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	☒ Yes	☐ No	☐ N/A	☐ see Comment #
5.	Sample containers are intact?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
6.	Custody seals on sample containers intact, signed and dated?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
7.	All samples on coc received?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
8.	All sample label information matches coc?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
9.	Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	☒ Yes	☐ No	☐ N/A	☐ see Comment #
10.	Shipment meets LvLI Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	☐ Yes	☒ No	☐ N/A	☒ see Comment # 1
11.	Where applicable, bar code labels are affixed to coc?	☐ Yes	☐ No	☒ N/A	☐ see Comment #
12.	coc signed and dated?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
13.	coc will be faxed or emailed to client?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
14.	Project Manager/Client contacted concerning discrepancies? (name/date)	☐ Yes	☐ No	☒ N/A	☐ see Comment #

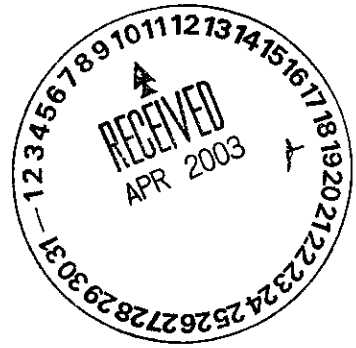
Cooler # / temp (°C) and Comments:

#ERC 01-027 / 15.6°C

#1 Sample received 15.6°C

Laboratory Sample Custodian: D. Johnson

Laboratory Project Manager:



Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B00-054 H2105

DATE RECEIVED: 03/20/03 LVL LOT # :0303L985

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00JD1						
% SOLIDS	001	S	03L%S038	03/18/03	03/20/03	03/21/03
% SOLIDS	001 REP	S	03L%S038	03/18/03	03/20/03	03/21/03
NITRITE BY IC	001	S	03LICA18	03/18/03	03/21/03	03/21/03
NITRITE BY IC	001 REP	S	03LICA18	03/18/03	03/21/03	03/21/03
NITRITE BY IC	001 MS	S	03LICA18	03/18/03	03/21/03	03/21/03
NITRATE BY IC	001	S	03LICA18	03/18/03	03/21/03	03/21/03
NITRATE BY IC	001 REP	S	03LICA18	03/18/03	03/21/03	03/21/03
NITRATE BY IC	001 MS	S	03LICA18	03/18/03	03/21/03	03/21/03
SULFATE BY IC	001	S	03LICA18	03/18/03	03/21/03	03/21/03
SULFATE BY IC	001 REP	S	03LICA18	03/18/03	03/21/03	03/21/03
SULFATE BY IC	001 MS	S	03LICA18	03/18/03	03/21/03	03/21/03
NITRATE NITRITE	001	S	03LN3A18	03/18/03	03/27/03	03/27/03
NITRATE NITRITE	001 REP	S	03LN3A18	03/18/03	03/27/03	03/27/03
NITRATE NITRITE	001 MS	S	03LN3A18	03/18/03	03/27/03	03/27/03
PH	001	S	03LPH023	03/18/03	03/27/03	03/27/03
PH	001 REP	S	03LPH023	03/18/03	03/27/03	03/27/03
LAB QC:						
NITRITE BY IC	MB1	S	03LICA18	N/A	03/21/03	03/21/03
NITRITE BY IC	MB1 BS	S	03LICA18	N/A	03/21/03	03/21/03
NITRATE BY IC	MB1	S	03LICA18	N/A	03/21/03	03/21/03
NITRATE BY IC	MB1 BS	S	03LICA18	N/A	03/21/03	03/21/03
SULFATE BY IC	MB1	S	03LICA18	N/A	03/21/03	03/21/03
SULFATE BY IC	MB1 BS	S	03LICA18	N/A	03/21/03	03/21/03
NITRATE NITRITE	MB1	S	03LN3A18	N/A	03/27/03	03/27/03
NITRATE NITRITE	MB1 BS	S	03LN3A18	N/A	03/27/03	03/27/03

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD B00-054 H2105
LVL#: 0303L985

W.O.#: 11343-606-001-9999-00
Date Received: 03-20-03

INORGANIC NARRATIVE

1. This narrative covers the analyses of 1 soil sample.

2. The sample was prepared and analyzed in accordance with the methods indicated on the attached glossary.

3. Sample holding times as required by the method and/or contract were met.

4. The results presented in this report are derived from samples that did not meet LvLI's sample acceptance policy as noted on the Sample Receipt Checklist.

5. The method blanks were within the method criteria.

6. The Laboratory Control Samples (LCS) were within the laboratory control limits.

7. The matrix spike recoveries for Nitrate, Nitrite, Sulfate and Nitrate Nitrite were within the 75-125% control limits.

8. The replicate analyses for Percent Solids, Nitrate, Nitrite, Sulfate, Nitrate Nitrite and pH were within the 20% Relative Percent Difference (RPD) control limit.

9. Results for solid samples are reported on a dry weight basis.

10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard copy package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

03-31-03
Date

njp\i03-985

The results presented in this report relate to the analytical testing and conditions of the samples upon receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 11 pages.

208 Welsh Pool Road • Lionville, PA 19341-1333 • (610) 280-3000 • Fax (610) 280-3041

Lionville Laboratory Incorporated

WET CHEMISTRY

METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

	ASTM	SW846	OTHER
% Ash	__ D2216-80		
% Moisture	__ D2216-80		__ ILMO4.0 (e)
% Solids	✓ D2216-80		__ ILMO4.0 (e)
% Volatile Solids	__ D2216-80		
ASTM Extraction in Water	__ D3987-81/85		
BTU	__ D240-87		
CEC		__ 9081	__ c
Chromium VI		__ 3060A/7196A	
Corrosivity ___ by coupon ___ by pH		__ 1110(mod) __ 9045C	
Cyanide, Total		__ 9010B	__ ILMO4.0 (e)
Cyanide, Reactive		__ Section 7.3/9014	
Halides, Extractable Organic		__ 9020B	__ EPA 600/4/84-008
Halides, Total		__ 9020B	__ EPA 600/4/84-008
EP Toxicity		__ 1310A	
Flash Point		__ 1010	
Ignitability		__ 1010	
Oil & Grease		__ 9071A	
Carbon, Total Organic		__ 9060	__ Lloyd Kahn (mod)
Oxygen Bomb Prep for Anions	__ D240-87(mod)	__ 5050	
Petroleum Hydrocarbons, Total Recoverable		__ 9071	__ EPA 418.1
pH, Soil		✓ 9045C	
Sulfide, Reactive		__ Section 7.3/9030B	
Sulfide		__ 9030B(mod)	
Specific Gravity	__ D1429-76C/	__ D5057-90	
Sulfur, Total		__ 9056	
Synthetic Preparation Leach		__ 1312	
Paint Filter		__ 9095A	

Other: Nitrate, Nitrite, Sulfate **Method:**

Other: Nitrate Nitrite **Method** EPA 353.2 (mod.)

Lionville Laboratory Incorporated

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

* = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

MB = Method or Preparation Blank.
MS = Matrix Spike.
MSD = Matrix Spike Duplicate.
REP = Sample Replicate
LC = Laboratory Control Sample.
NC = Not calculated.

A suffix of -R, -S, or -T following these codes indicate a replicate, spike or sample duplicate analysis respectively.

ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.

2. USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020).

3. Test Methods for Evaluating Solid Waste (USEPA SW-846).

a. Standard Methods for the Examination of Water and Waste, 16 ed, (1983).

b. Standard Methods for the Examination of Water and Waste, 17 ed, (1989)/18ed (1992).

c. Method of Soil Analysis, Part 1, Physical and Mineralogical Methods, 2nd ed, (1986).

d. Method of Soil Analysis, Part 2, Chemical and Microbiological Properties, Am. Soc. Agron., Madison, WI (1965).

e. USEPA Contract Laboratory Program, Statement of Work for Inorganic Analysis.

f. Code of Federal Regulations.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 03/28/03

CLIENT: TNUHANFORD B00-054 H2105 LVL LOT #: 0303L985

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J00JD1	% Solids	89.8	%	0.01	1.0
		Nitrite by IC	1.39 u	MG/KG	1.39	1.0
		Nitrate by IC	15.3	MG/KG	1.39	1.0
		Sulfate by IC	138	MG/KG	13.9	10.0
		Nitrate Nitrite	4.2	MG/KG	0.20	1.0
		pH	8.5	PH UNIT	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 03/28/03

CLIENT: TNUHANPORD B00-054 H2105 LVL LOT #: 0303L985

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	03LICA18-MB1	Nitrite by IC	1.25 u	MG/KG	1.25	1.0
		Nitrate by IC	1.25 u	MG/KG	1.25	1.0
		Sulfate by IC	1.2 u	MG/KG	1.2	1.0
BLANK10	03LN3A18-MB1	Nitrate Nitrite	0.20 u	MG/KG	0.20	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 03/28/03

CLIENT: TNUHANFORD B00-054 H2105 LVL LOT #: 0303L985

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J00JD1	Nitrite by IC	29.8	1.39u	28.0	106.6	1.0
		Nitrate by IC	45.1	15.3	28.0	106.6	1.0
		Sulfate by IC	425	138	278	103.1	10.0
		Nitrate Nitrite	9.2	4.2	5.5	92.5	1.0
BLANK10	03LICA18-MB1	Nitrite by IC	24.4	1.25u	25.0	97.6	1.0
		Nitrate by IC	23.6	1.25u	25.0	94.5	1.0
		Sulfate by IC	24.1	1.2 u	25.0	96.5	1.0
BLANK10	03LN3A18-MB1	Nitrate Nitrite	5.2	0.20u	5.0	103.2	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 03/28/03

CLIENT: TNUHANFORD B00-054 H2105 LVL LOT #: 0303L985

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J00JD1	% Solids	89.8	91.1	1.3	1.0
		Nitrite by IC	1.39u	1.39u	NC	1.0
		Nitrate by IC	15.3	17.9	15.5	1.0
		Sulfate by IC	138	156	12.1	10.0
		Nitrate Nitrite	4.2	4.7	11.6	1.0
		pH	8.5	8.6	0.6	1.0

Lionville Laboratory Use Only
0303L985

Custody Transfer Record/Lab Work Request

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI LIONVILLE LABORATORY INC.

Client: TNU Hanford B00-054
Est. Final Proj. Sampling Date:
Project #: 11343-606-001-9999-00
Project Contact/Phone #:
Lionville Laboratory Project Manager: Orlette Johnson
QC: SPEC Del: STD TAT: 7 days
Date Rec'd: 3-20-03 Date Due: 3-27-03

Refrigerator #	6
#/Type Container – Liquid	
#/Type Container – Solid	1p
Volume – Liquid	
Volume – Solid	1L
Preservatives	—

ANALYSES REQUESTED: ORGANIC: VOA, BNA, Pest/PCB, Herb, Alcohols Glycols Ketones; INORG: Metal (1), CN, pH, IC Anions

Lionville Laboratory Use Only: 062VH, 062SH, 06GSC, MET(1), I pH, ICNO3 ICNO2 ICSO4, IN3N2

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	MS	MSD	Matrix	Date Collected	Time Collected	VOA (062VH)	BNA (062SH)	Pest/PCB	Herb	Alcohols Glycols Ketones (06GSC)			Metal (1) (MET(1))	CN	pH (I pH)	IC Anions (ICNO3 ICNO2 ICSO4)	IN3N2
001	J00JD1	X	X	S	3-18-03	1000	X	X			X			X		X	X	

Special Instructions: SAF # B00-054

DATE/REVISIONS:
MET(1) 1. Sb, Ba, Be, Cd, Cr, Cu, Mn, Ni, Ag,
2. V, Zn, As, Pb, Se, Tl, Hg
3.
4.
5.
6.

Lionville Laboratory Use Only
Samples were:
1) Shipped ✓ or Hand Delivered
Airbill # 8358 1726 5110
2) Ambient or Chilled (Ambient circled)
3) Received in Good Condition (Y) or N
4) Samples Properly Preserved (Y) or N
5) Received Within Holding Times (Y) or N

Tamper Resistant Seal was:
1) Present on Outer Package (Y) or N
2) Unbroken on Outer Package (Y) or N
3) Present on Sample (Y) or N
4) Unbroken on Sample (Y) or N
COC Record Present Upon Sample Rec't (Y) or N
Cooler Temp. 15.6 °C

Relinquished by	Received by	Date	Time
[signature]	[signature]	3-20-03	0910

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL REWRITTEN		

Discrepancies Between Samples Labels and COC Record? Y or (N)
NOTES:

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B00-054-238	Page 1 of 1

Collector R B Kerkow	**Company Contact** R B Kerkow **Telephone No.** 372-2187	**Project Coordinator** TRENT, SJ	**Price Code** 8 J **Data Turnaround** 7 days
Project Designation 100-NR-1 TSD Sites R. A. Sampling - Soil	**Sampling Location** 116-N-1 Trench , Plume 8-B (container 733)	**SAF No.** B00-054	**Air Quality** ☐
Ice Chest No. ERC 01 027	**Field Logbook No.** EL 1524-3 **COA** R1301N2600	**Method of Shipment** FED EX	
Shipped To ~~TMA~~/RECRA	**Offsite Property No.** RSR 107175	**Bill of Lading/Air Bill No.** N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS
Radioactive

Special Handling and/or Storage
None

Preservation	Cool 4C	None	None	Cool 4C	None						
Type of Container	P/WM	C	C	C	Marinelli						
No. of Container(s)	1	1	1	1	1						
Volume	~~60mL~~ 1000 mL				500mL						
SAMPLE ANALYSIS	See item (1) in Special Instructions.	pH (Soil) - 9045	IC Anions - 300.0 (Nitrate, Nitrite, Sulfate); NO2/NO3 - 353.1	Alcohols, Glycols, & Ketones - 8015M (Methanol) + SEE #3	See item (2) in Special Instructions. RK 3-18-03						
Sample No.	**Matrix ***	**Sample Date**	**Sample Time**								
J00JD1	SOIL	3/18/03	1000	X	X	X	X				

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/~~Removed From~~ RB KERKOW/RB Kerkow	Date/Time 1650 3-18-03	~~Received By~~/Stored In REF 1A, RBKERKW	Date/Time 1650 3-18-03
Relinquished By/Removed From REF 1A 31903	Date/Time 0900	Received By/Stored In SJGALE 31903	Date/Time 0900
Relinquished By/Removed From SJGALE 31903	Date/Time 0900	Received By/Stored In FED EX	Date/Time
Relinquished By/Removed From FED EX 3.20.03	Date/Time 0910	Received By/Stored In	Date/Time 3.20.03/0910
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS
Lab COA: R1301N2F00

(1) ICP Metals - 6010A (TAL) {Antimony, Barium, Beryllium, Cadmium, Chromium, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP Metals - 6010A (Add-on) {Arsenic, Lead, Selenium, Thallium}; Mercury - 7471 - (CV)
~~(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Isotopic Plutonium, Americium-241, Strontium-89,90 -- Total-U, Nickel-63, Tritium - H3; Isotopic Uranium, Gross Alpha, Gross Beta~~ RK 3/18/03

(3) ADD: VOA's (8260) and SEMI VOA's (8270) IN SOIL. RK
NOTE: SAMPLE MATERIAL IS IN A 1-LITER PLASTIC CONTAINER. RK 3-18-03

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
Ve=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Personnel not available to relinquish samples from the 3728 Ref # 1A on 3/19/03

BHI-EE-011 (03/01/2002)

LIONVILLE LABORATORY INCORPORATED
SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hanford

Purchase Order/Project:

DATE: 3-20-03

(SAF#) SOW# / Release #: 600-054

Laboratory SDG #: 03031985

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

1.	Custody seals on coolers or shipping container intact, signed and dated?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
2.	Outside of coolers or shipping containers are free from damage?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
3.	Airbill # recorded?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
4.	All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	☒ Yes	☐ No	☐ N/A	☐ see Comment #
5.	Sample containers are intact?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
6.	Custody seals on sample containers intact, signed and dated?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
7.	All samples on coc received?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
8.	All sample label information matches coc?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
9.	Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	☒ Yes	☐ No	☐ N/A	☐ see Comment #
10.	Shipment meets LvLl Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	☐ Yes	☒ No	☐ N/A	☒ see Comment #
11.	Where applicable, bar code labels are affixed to coc?	☐ Yes	☐ No	☒ N/A	☐ see Comment #
12.	coc signed and dated?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
13.	coc will be faxed or emailed to client?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
14.	Project Manager/Client contacted concerning discrepancies? (name/date)	☐ Yes	☐ No	☒ N/A	☐ see Comment #

Cooler # / temp (°C) and Comments:

#ERC 01-027 / 15.6°C

#1 sample received @ 15.6°C

Laboratory Sample Custodian:

Laboratory Project Manager: